

Claims

1. A system for current regulation of a light emitting diode, said system comprising:
 - a voltage source,
 - a light emitting diode electrically connected to said voltage source for supplying
 - 5 light to an area,
 - at least one field effect transistor electrically connected to said voltage source and said light emitting diode,
 - wherein said field effect transistor is a voltage driven component having an output current governed by a junction voltage of said field effect transistor.
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2. The system for current regulation of a light emitting diode according to claim 1, wherein said junction voltage is made constant by connecting a gate and a source of said field effect transistor together.
- 15 3. The system for current regulation of a light emitting diode according to claim 1, wherein a resistor is electrically connected between said gate and said source to create a predetermined nonzero gate-source voltage.
4. The system for current regulation of a light emitting diode according to claim 1,
- 20 wherein said gate and said source are electrically connected to create a substantially zero gate-source voltage.

5. The system for current regulation of a light emitting diode according to claim 1, wherein a current supplied to said light emitting diode is limited by a maximum output current value defined the output voltage of the field effect transistor set by a gate-source voltage.

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6. The system for current regulation of a light emitting diode according to claim 1, wherein said field effect transistor allows current to pass as long as said current is no greater than a maximum output current value defined the output voltage of the field effect transistor set by a gate-source voltage.

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7. The system for current regulation of a light emitting diode according to claim 1, wherein an average current delivered to said light emitting diode is proportional to a maximum output current value defined the output voltage of the field effect transistor set by a gate-source voltage.

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8. The system for current regulation of a light emitting diode according to claim 1, wherein said field effect transistor is disposed upstream of said light emitting diode.

9. The system for current regulation of a light emitting diode according to claim 1,
20 wherein said field effect transistor is disposed downstream of said light emitting diode.

10. The system for current regulation of a light emitting diode according to claim 1, wherein an optional resistor may be electrically connected between said gate and said source.

5 11. The system for current regulation of a light emitting diode according to claim 1, wherein at least two field effect transistors are electrically connected to said voltage source and said light emitting diode.